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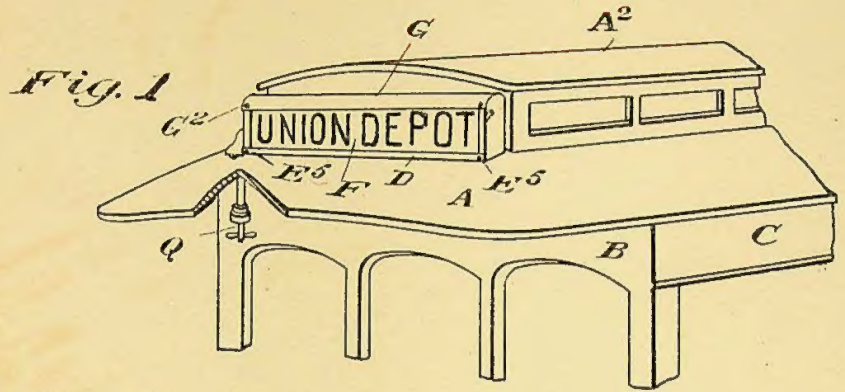


Fig. 2

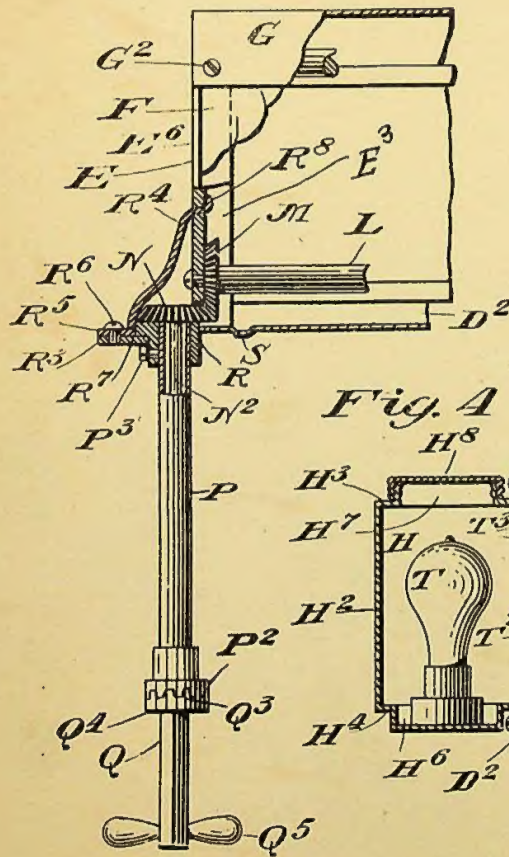


Fig. 3

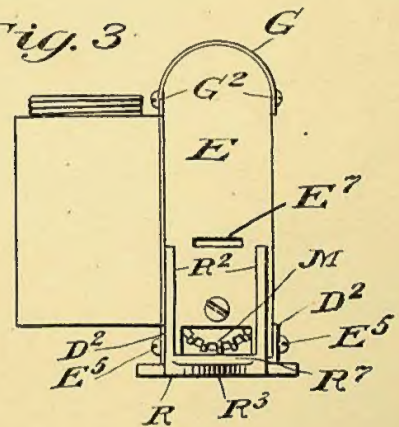


Fig. 4

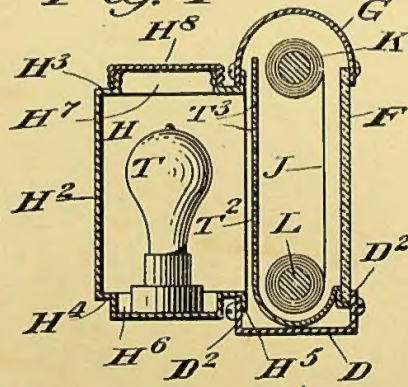


Fig. 5

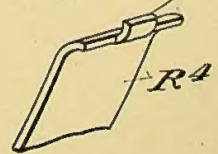


Fig. 6

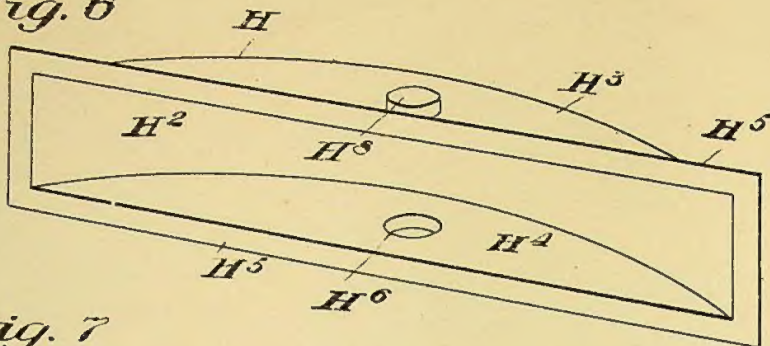


Fig. 7

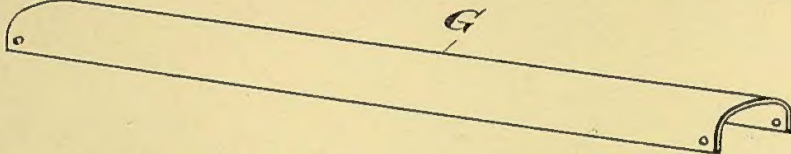


Fig. 8

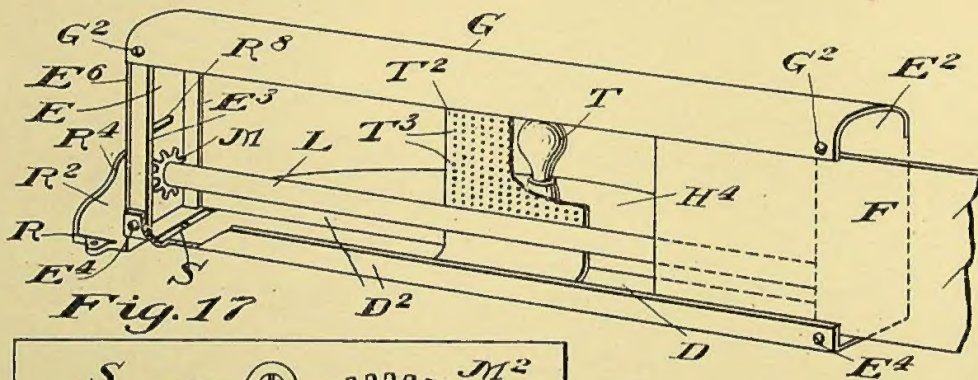


Fig. 17

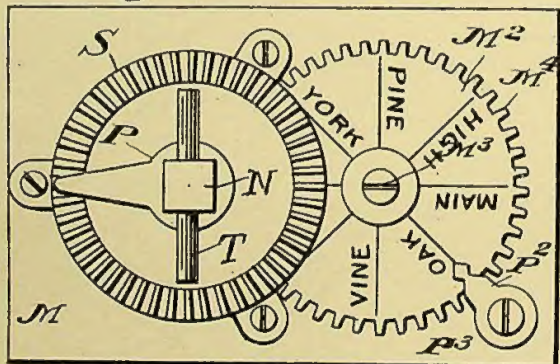


Fig. 9

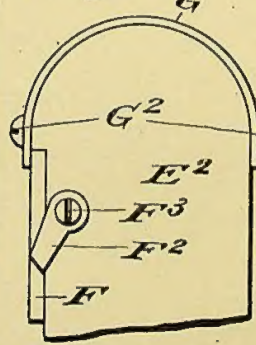


Fig. 10

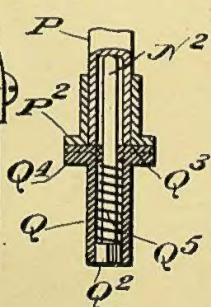
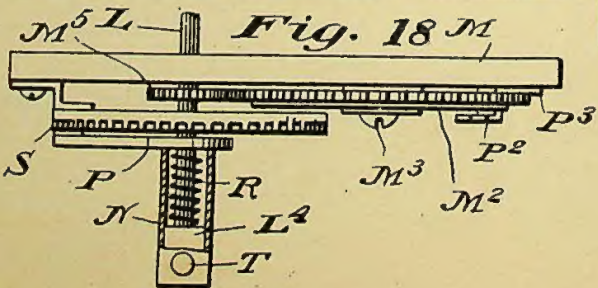


Fig. 18



[This Drawing is a reproduction of the Original on a reduced scale.]

1900

Signs Belt
84

Fig. 11

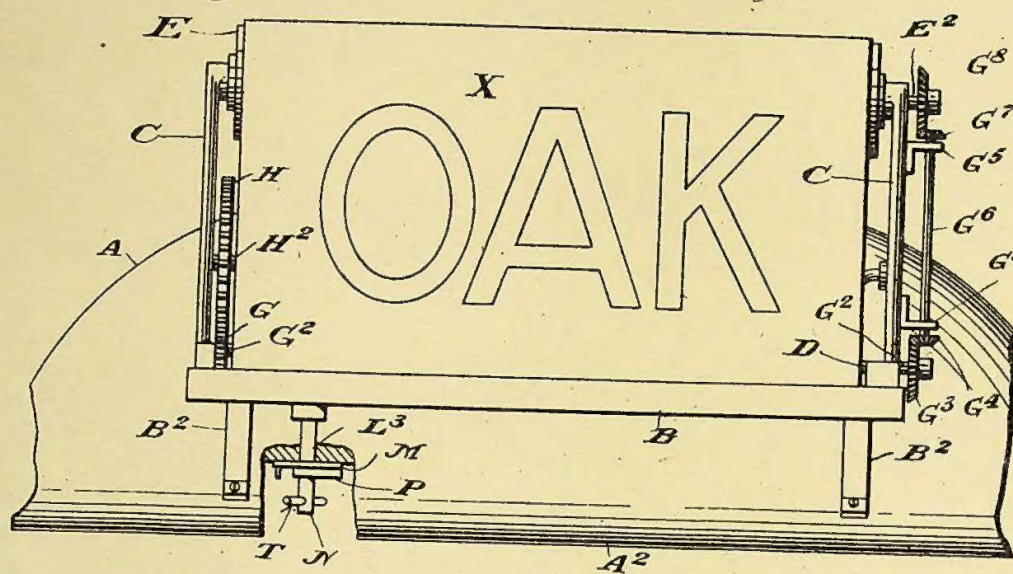


Fig. 12

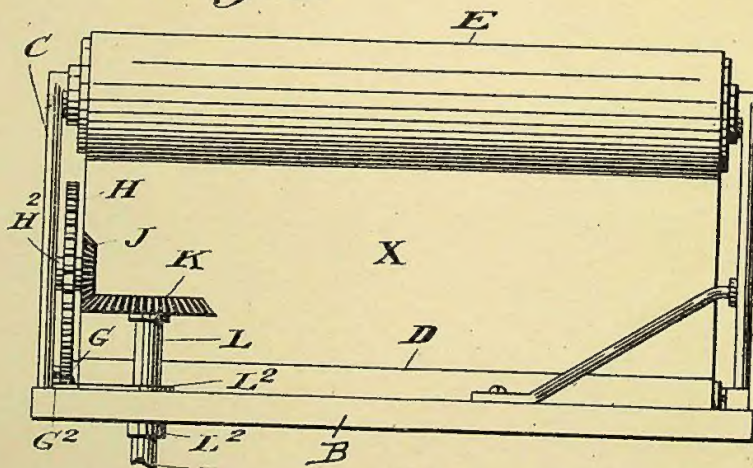


Fig. 13

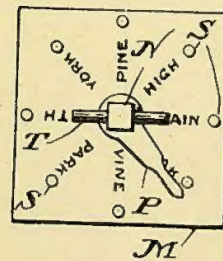


Fig. 15

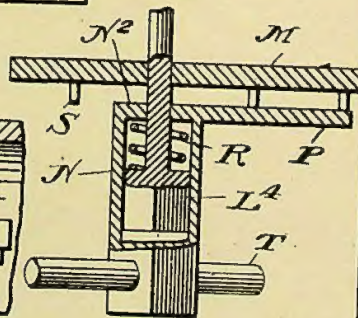


Fig. 14

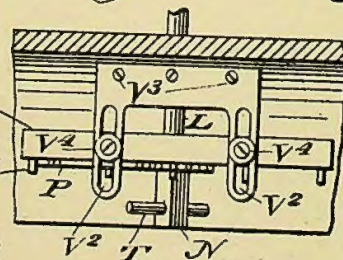
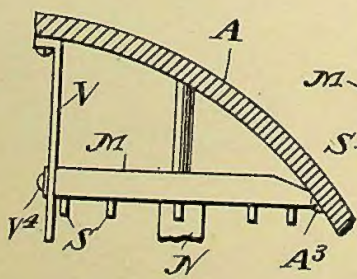


Fig. 16



[This Drawing is a reproduction of the Original on a reduced scale.]

Signs Belt

N° 6152



34
35

A.D. 1900

Date of Application, 2nd Apr., 1900—Accepted, 12th May, 1900

COMPLETE SPECIFICATION.

**Improvements in Station or Route Indicators for Tramway Cars
and the like.**

We, **LYTLE JOHNSON HUNTER**, a Citizen of the United States, and a resident of the City of Covington, in the County of Kenton, and State of Kentucky, Manufacturer, and **LONZO JOHNSON COOPER**, a Citizen of the United States, and a resident of the Town of Norwood, in the County of Hamilton, and State of Ohio, Mechanical Engineer, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to station indicators for use on street railway cars, and the object is to provide an indicator of simple and inexpensive construction adapted for adjustment to indicate different routes.

In the drawings,—Figure 1 shows in perspective a part of a car having an indicator embodying the invention.

Figure 2 is a sectional elevation showing the left hand end of the indicator on an enlarged scale.

Figure 3 is an end view, and Figure 4 is a transverse vertical section taken through the indicator.

Figure 5 is a perspective view showing a detail of construction.

Figure 6 is a perspective view showing the lamp chamber and reflector.

Figure 7 is a perspective view of the removable roof.

Figure 8 is a perspective view of the upper part of the indicator.

Figure 9 is a view showing part of the right hand end of the indicator.

Figure 10 is a sectional elevation showing portions of the operating device of the indicator.

Figure 11 is an elevation showing a modified form of the indicator applied to a car.

Figure 12 is a rear elevation of the parts shown in Figure 11, and above the car.

Figure 13 is an under side view showing the index and operating devices of the modification.

Figure 14 is a rear elevation of the parts below the roof.

Figure 15 is a sectional elevation through the operating devices of the modification.

Figure 16 is an end elevation showing the index supporting devices.

Figures 17 and 18 are views showing another modification.

Referring first to Figures 1 to 10, A is the car roof having a raised portion A² in front of which the indicator is mounted. B indicates the end and C the side of the car. D indicates the base of the indicator having side flanges D², and E, E² are end pieces having flanges E³ near each edge, and secured to bottom D by bolts or screws E⁵ passed through holes E⁴ in flange D², and into flanges E³. The edges of ends E, E² project beyond flanges E³ as seen at E⁶ to space the roof cap G and flange D² away from flanges E³ to receive the glass front F, which is slid endwise into place, as indicated in Figure 8, and is secured by a latch F² pivoted at F³ to end E² and engaging the end of the glass.

The back of the indicator forms an illuminating chamber H, having a curved

[Price 8d.]

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back wall H², a top H³ and bottom H⁴. The front is open, but the ends, top and bottom are flanged as seen at H⁵, to permit the back to be held between flanges D², E³, similarly to the glass front F, the projection E⁶ of the ends holding the back against removal. The cap G also holds the upper flange H⁵ in place and arches over the indicator, being secured by screws G² to ends E, E². 5

T indicates a lighting device in the chamber H, being an incandescent electric lamp, as herein shown, the wires coming up through an opening H⁶ in the bottom H⁴. The top H³ has an opening H⁷ over lamp T and closed by a cap H⁸, so that the lamp may be removed at will. A light diffuser T² formed of a metal plate perforated as shown at T³, is arranged in front of lamp T. 10

J is the indicator strip, rolled on parallel rollers K and L, journaled in the ends E, E², the upper roller K having a spring by means of which the strip J is wound, when released, on roller K and kept taut at all times. Roller L has a bevel gear M which engages a horizontal bevel gear N, held on a shaft N² rotating in a sleeve P whose lower end is enlarged and has notches P². A sleeve Q is held on the end of shaft N² and has an angular passage in which fits a square head Q² on the end of shaft N². A spring Q⁵ is coiled on shaft N² above head Q² and bearing on sleeve Q to hold sleeve Q pressed against sleeve P, and sleeve Q has teeth Q³ preferably on a disk Q⁴ to engage notches P² in sleeve P. 15

The upper end of shaft N² is journaled and supported by a piece R having side flanges R² having lugs or eyes R³ for attachment to the roof. R⁴ is a bracket piece or strip having a flange R⁵ bolted to piece R by a bolt R⁶. The flange R⁵ fits a shoulder R⁷ on piece R and the upper end of strip R⁴ has a hook R⁸ to be inserted in a slot E⁷ in end E. Sleeve P is secured to piece R by a set screw P³. 20

To permit rain water to be discharged from the case, I provide the bottom D with a discharge channel S.

The strip J has names of different terminals of the road and in order to cause one or another of these to appear, the operator draws down on the sleeve Q to disengage fingers Q³ from notches P², and permit rotation of shaft N², whereby the strip is more or less wound upon roller L off of roller K. 30

In the device shown in Figures 11 to 16, A² indicates the front edge of the car roof and B a foundation having braces or legs B² secured to the roof and from which rise supports C, in which are journaled rollers D and E, the indicator strip X being held by these rollers, one of which is spring actuated to cause it to wind up any slack in strip X. 35

G is a gear wheel on the shaft G² of roller D and meshing with a gear H on a shaft H² journaled on one of the supports C. Shaft H² has a bevel pinion J meshing with a bevel gear K on shaft L journaled on foundation B at L² and extending down through an opening L³ in the car roof and through an index plate M, into a cylinder or box N, terminating in an angular part L⁴ fitting the bore of said box, which is movable lengthwise of the shaft on which it is guided by its top N² and by the part L⁴ of the shaft. The box is held to turn with the shaft and has an index P which is pressed toward plate M by a spring R in box N between the top N² and part L⁴ of shaft L. 40

Plate M has marked on it stations which are on strip X or if desired characters may be employed to denote the stations. Opposite each station or character on plate M is a projection S adapted to be engaged by index P but short enough to allow the index to clear them when pulled away from the plate and a handle T is provided on box N for operating shaft L. One of the projections S or that for the station at the end of the trip or journey is long enough to prevent the index finger passing it in any position. To secure plate M to the sloping roof, an adjusting plate V is employed, having slots V² and screwed at V³ to the car roof A. Screws V⁴ pass through slots V² into one side of plate M, which is secured at its opposite edge by screws A³ to the roof A. In this way, the edge of plate M where screws V⁴ are located may be adjusted up 55

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or down so as to align the plate with the plane in which index P moves, after which screws V⁴ are tightened to hold the plate fast.

If desired, to equalize the movements of rollers D and E, the gearing shown at the right of Figure 11 may be employed. This comprises a bevel gear G⁸ on the shaft of roller E and meshing with a pinion G⁷ on shaft G⁶ which turns in journals G⁵ and carries a bevel pinion G⁴ meshing with a gear G³ on the shaft G² of roller D.

In Figures 17 and 18, is shown a device for use where a great number of stations are marked on strip X. As shown shaft L below plate M carries a box N, spring R and index P, as above described. Shaft L has a pinion M⁵ meshing with gear face M⁴ on an index plate M³ turning on shaft M³, and traversed by a stationary pointer P² secured at P³. Plate M² carries the names of stations or characters indicative thereof. By this construction, owing to the interposed gearing, the names on plate M² may be placed much nearer together than those of the plate M in the construction shown in Figures 11 to 16.

Having now particularly described and ascertained the nature of our said invention, and in what manner the same is to be performed, we declare that what we claim is:—

1. In a changeable sign, the combination of index plate, shaft L, through the latter, box N on the shaft, index finger P attached to the box under the index plate M, handle T on lower end of box, and spring R between part of box and projection L⁴ of shaft, detents S fixed on the plate and short enough to allow the index finger to clear them when pulled away from the index plate, and a detent for station at the end of trip, long enough to prevent the index finger from passing it, a sign curtain wound on rollers, a spring for actuating one of the rollers, and mechanism for enabling the rotation of the shaft L to rotate one of the rollers in opposition to the winding spring, substantially as and for the purposes specified.

2. In a changeable sign, the combination of one roller E, and spring therein, for actuating it in a given direction, a second roller D, and a flexible sign stretched between both rollers, and having a part of it always wound upon either or both rollers gear wheels G, H, beveled gear J, K, shaft L fixed to the latter, index plate M, projection L⁴ on shaft L below plate M, box N, spring R, between the top N² of the box or frame, and the projection L⁴, handle T fixed to the box, and detents, substantially as and for the purposes specified.

3. The combination of the rollers above the platform, and flexible sign thereon, inclined roof or street car, shaft for connecting the means for working the sign above, and the index plate below, and the said shaft and index finger, and means for operating it, and the adjusting devices consisting of the plate V, slotted at V², V², and set screws V⁴, V⁴, engaging the index plate M, the plate V and the plate M being likewise secured and rendered stationary by the roof, substantially as and for the purposes specified.

4. In a station indicator, a casing having a bottom D provided with side flanges D², and the ends E having flange E³ and projection E⁶, and cap G, and glass F, and a locking detent, for keeping the glass from sliding out of place, substantially as and for the purposes specified.

5. In a station indicator casing, the bottom D having flanges D², ends E having flanges E³, glass F, cap G, and rear illuminating chamber having open front provided with flanges H³, engaging the adjacent flange D² and cap G, substantially as and for the purposes specified.

6. In the casing of a station indicator, the bottom D provided with side flanges D², and the transverse gutter S, ends E E³, having flanges E³, and glass F whose ends are located between the flanges E³ and a flange D², and the cap G, lapping the glass and flange E³, substantially as and for the purposes specified.

7. In a station indicator, a casing containing an indicator strip and having rollers, and ends wherein the rollers are journaled, a beveled gear on one of the

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rollers, a horizontal beveled gear outside of the casing and meshing with the first named gear, a vertical shaft connected to the horizontal gear, a piece R for supporting the latter gear, and a bracket piece R⁴ having a double curved hook engaging a slot in the end of the casing and connected at bottom to the piece R, and means for rotating the shaft of the horizontal gear, and holding it at a given point of rotation, substantially as and for the purposes specified. 5

8. In a station indicator, a casing containing an indicator strip and having rollers, and ends wherein the rollers are journaled, a beveled gear on one of the rollers, a horizontal beveled gear outside of the casing and meshing with the first named gear, a vertical shaft connected to the horizontal gear, a piece R 10 for supporting the latter gear, and a bracket piece R⁴ having a double curved hook engaging a slot in the end of the casing and connected at bottom to the piece R, the piece R having the side flanges R², and the eye flanges R³, the side flanges R² and the bracket piece R⁴, together covering the horizontal gear wheel, and contributing to the support thereof, cap G having eyes G², and means for 15 rotating the shaft of the horizontal gear, and holding it at a given point of rotation, substantially as and for the purposes specified.

9. In a station indicator, a casing, rollers therein, an indicator strip connected with the rollers ends of casing, a horizontal beveled gear on one of the rollers, within the casing, a horizontal beveled gear engaging the first named gear, 20 vertical shaft connected to the last named gear, a sleeve embracing said shaft, a bracket piece R for directly supporting the horizontal gear and its shaft and in turn hung from the casing of the indicator, the sleeve having its upper end connected to the piece R, and extending down, and provided at its lower end with notches, a sleeve Q located on the shaft below the first named sleeve, and 25 capable of reciprocating with the length of the shaft and constructed to compel the shaft to rotate with it, this sleeve Q having a finger rigidly connected thereto for engaging a given notch on the upper sleeve, and elastic means for elevating the sleeve Q and elastically pressing it toward the upper sleeve, substantially as and for the purposes specified. 30

10. A casing for car indicators comprising end portions having flanges, a bottom portion and a cap connected to and extending between said end portions at bottom and top of the casing, this bottom and this top being also provided with flanges spaced away from the flanges of the end portions, spaces being 35 formed between the flanges of said end portions on one side and the flanges of the cap and bottom portion on the other side, substantially as and for the purposes specified.

11. A casing for car indicators comprising end portions having flanges, a bottom portion and a cap connected to and extending between said end portions at bottom and top of the casing and also provided with flanges spaced away 40 from the flanges of the end portions, and a back portion formed with an illuminating chamber and having its edges held between the flanges of the end portions on one side and the flanges of the cap and bottom portion on the other side, substantially as and for the purposes specified.

12. In a car indicator, the combination of a casing having an end portion 45 formed with an opening leading to the inside of the casing, and with a projection exterior to the casing, a shaft mounted to turn in the casing, a gear wheel on said shaft, an operating shaft outside of the casing having its end journaled in the exterior projection of the end portion of the casing, a gear wheel on said operating shaft with one side of its periphery extended through the 50 opening in the end portion of the casing and in mesh with the gear wheel on the shaft inside the casing, and a cover plate extended over the gear wheel on the operating shaft, substantially as and for the purposes specified.

13. In a car indicator, the combination of a casing comprising end portions, a bottom portion, and a cap, a transparent sign held in the casing, a back por- 55 tion for the casing secured to the back part of the casing and cut away upon its front side, and an illuminating device in said back portion, substantially as and for the purposes specified.

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14. In a car indicator, the combination of a casing, a shaft therein, a sign curtain carried by the shaft, a projection on the casing, a sleeve held by said projection and extended at an angle to the shaft therein, an operating shaft extended through the sleeve, gearing between said operating shaft and the curtain carrying shaft, a part mounted for movement endwise along the operating shaft, but held to turn in unison therewith, devices carried by said part and by the sleeve and adapted for engagement to hold the operating shaft against rotative movement in the sleeve, and a spring for holding said devices normally in engagement, substantially as and for the purposes specified.

10 Dated this 13th day of March, A.D. 1900.

LONZO JOHNSON COOPER.
LYTLE JOHNSON HUNTER.